



ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-OPP-2013-0676; FRL-9903-12]

Pesticides; Consideration of Spray Drift in Pesticide Risk Assessment: Notice of Availability and Request for Comment

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: EPA is announcing the availability of two draft guidance documents for public comment. These documents describe how off-site spray drift will be evaluated for ecological and human health risk assessments for pesticides. Once final, these guidance documents will be posted on EPA's website, to ensure consistent risk assessment practices and provide transparency for pesticide registrants and other interested stakeholders.

DATES: Comments must be received on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE **FEDERAL REGISTER**].

ADDRESSES: Submit your comments, identified by docket identification (ID) number EPA-HQ-OPP-2013-0676, by one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the online instructions for submitting comments. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute.

- *Mail:* OPP Docket, Environmental Protection Agency Docket Center (EPA/DC), (28221T), 1200 Pennsylvania Ave., NW., Washington, DC 20460-0001.

• *Hand Delivery:* To make special arrangements for hand delivery or delivery of boxed information, please follow the instructions at

<http://www.epa.gov/dockets/contacts.htm>.

Additional instructions on commenting or visiting the docket, along with more information about dockets generally, is available at <http://www.epa.gov/dockets>.

FOR FURTHER INFORMATION CONTACT: For the ecological risk assessment guidance document, Faruque Khan, Environmental Fate and Effects Division, (7507P), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460-0001; telephone number: (703) 305-6127; email address: khan.faruque@epa.gov.

For the human health risk assessment guidance document, Jeff Dawson, Health Effects Division, (7509P), same address; telephone number: (703) 305-7329; email address: dawson.jeff@epa.gov.

SUPPLEMENTARY INFORMATION:

I. General Information

A. What is the Agency's Authority for Taking this Action?

Pesticides are regulated under both the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), 7 U.S.C. 136 *et. seq.*, and section 408 of the Federal Food, Drug, and Cosmetic Act (FFDCA) 21 U.S.C. 346a.

B. Does this Action Apply to Me?

You may be potentially affected by this action if you are a producer of pesticide products (NAICS 32532), importers of such products, or any person or company who seeks to obtain a tolerance for such a pesticide. The North American Industrial

Classification System (NAICS) code is not intended to be exhaustive, but rather provides a guide to help readers determine whether this document applies to them. Other types of entities not listed could also be affected.

C. What Should I Consider as I Prepare My Comments for EPA?

1. *Submitting CBI.* Do not submit this information to EPA through regulations.gov or email. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD-ROM that you mail to EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

2. *Tips for preparing your comments.* When submitting comments, remember to:

i. Identify the document by docket ID number and other identifying information (subject heading, **Federal Register** date and page number).

ii. Follow directions. The Agency may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.

iii. Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.

iv. Describe any assumptions and provide any technical information and/or data that you used.

- v. If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
- vi. Provide specific examples to illustrate your concerns and suggest alternatives.
- vii. Explain your views as clearly as possible, avoiding the use of profanity or personal threats.
- viii. Make sure to submit your comments by the comment period deadline identified.

D. What Action is the Agency Taking?

Pesticide drift can be characterized as the physical movement of a pesticide through the air at the time of application or soon thereafter from the target site to any non- or off-target site. This does not include pesticide movements by erosion, migration, volatility, or windblown soil particles after application. Drift is dependent on the design of application equipment, size of spray droplets or dry particles, weather conditions, and other factors.

Once off-target, pesticide drift can potentially deposit in unintended areas or directly onto people or nontarget species. To provide guidance to EPA staff and stakeholders, EPA has developed two documents describing EPA's approach to assessing pesticide drift in human health and ecological risk assessments. Both documents are available in the docket for this action using the docket identifier EPA-HQ-OPP-2013-0676.

- Guidance on Modeling Offsite Deposition of Pesticides via Spray Drift for Ecological and Drinking Water Assessments for the Environmental Fate and Effects Division (Draft dated 11/1/2013) (Ref. 1), and

- Residential Exposure Assessment Standard Operating Procedures (SOPs),

Addenda 1: Consideration of Spray Drift (Draft dated 11/1/2013) (Ref. 2).

The draft Ecological and Drinking Water Assessment Guidance provides information on estimating spray drift fractions of liquid sprays for modeling offsite deposition of a pesticide for ecological and drinking water assessment and on estimating distances from the treated field where adverse effects may be observed due to exposure to spray drift. The draft guidance also provides default assumptions for modeling inputs to use when estimating spray drift in terrestrial and aquatic assessments.

The Residential Exposure Addenda describes a screening approach for defining when assessments are needed and the methodology for estimating risks for indirect exposures to pesticide drift, such as children playing on a lawn that has pesticide residues that drifted from a nearby treated field. The draft guidance describes when quantitative risk assessments for spray drift are generally needed, and also provides the modeling inputs needed to complete the exposure and risk assessments.

EPA expects the model-generated values for spray drift fractions to provide realistic exposure and risk estimates for both ecological and human health assessments. These policies will promote consistency within EPA, as well as with other federal agencies and international regulatory partners that rely on predicted spray drift values.

II. Spray Drift Estimates Used for Risk Assessment

EPA uses two peer-reviewed spray drift models (AgDRIFT and AGDISP) to estimate the contribution of spray drift to ecological and human health risk assessments. Both models estimate drift fractions, as applicable to spray of liquid materials. In general, OPP uses the AgDRIFT model to assess spray drift from agricultural applications,

whereas AGDISP is used for other types of pesticide applications, such as aerial application of mosquito adulticides. It is noted that AGDISP has limited capability to estimate drift fractions from dry materials application.

EPA has prepared a support document (Ref. 3), which is available in the docket for this action, explaining the scientific basis for AgDRIFT and AGDISP, and providing information on this harmonized approach for estimating spray drift fractions.

III. Consideration of Spray Drift in Ecological Risk Assessment

To enhance consistency and provide more realistic risk estimates, the Agency has developed the draft ecological guidance (Ref. 1) to apply a uniform approach for estimating drift fractions for all tiers of ecological risk assessments. Unit III. provides historical information on OPP's approach for estimation of spray drift.

Prior to the adoption of AgDRIFT and AGDISP, for aquatic exposure assessment purposes, default values of 5% were recommended to OPP for use as estimates for the spray drift loading from aerial and air-blast applications to a pond (Ref. 4). However, beginning in the 1990s, OPP's practice was to use default drift values -- developed using best professional judgement -- of 5% (aerial application), 3% (airblast application), and 1% (ground application) in terrestrial and aquatic assessments. Then, to make more realistic calculations of exposure from spray drift deposition, EPA implemented the use of AgDRIFT model-generated values for spray drift fractions for:

- Screening-level (Tier I) aquatic exposure model GENEEC (GENeric Estimated Exposure Concentration) for ecological exposure assessments, and

- Tier I - FIRST (FQPA Index Reservoir Screening Tool) and Tier II – PRZM (Pesticide Root Zone Model)/EXAMS (Exposure Analysis Modeling System) for drinking water assessments.

However, the practice of using default drift values of 5% (aerial application), 3% (airblast application), and 1% (ground application) in terrestrial and Tier II aquatic assessments continued.

In 2004, EPA staff performed a comparison study of these previously-specified, percentage-based default spray drift deposition levels and AgDRIFT predictions. The comparison indicated these default values can potentially underestimate off-site deposition of spray drift under certain scenarios when compared to model-predicted values (Ref. 5).

Based upon continued model refinements, EPA is now revising its approach for terrestrial and Tier II aquatic assessments. As a result of these revisions, EPA has developed default model input parameters to estimate the spray drift fraction for all tiers of aquatic and terrestrial exposure assessments. Use of these inputs in the AgDRIFT model should result in more realistic estimates of exposure from spray drift deposition for all terrestrial and aquatic environments.

IV. Consideration of Spray Drift in Human Health Risk Assessment

The draft guidance for considering spray drift in human health risk assessment has been developed as an addendum to the EPA's existing *SOPs For Residential Exposure Assessment (SOPs)*, which are available at <http://www.epa.gov/pesticides/science/residential-exposure-sop.html>. EPA routinely uses

the SOPs as the basis for evaluating the risks associated with residential exposures to pesticides, including residential turf assessments.

The predominant sources of potential human health risks associated with spray drift is from direct contact with sprays and from contact with contaminated surfaces such as lawns in areas adjacent to pesticide applications. Direct contact with sprays is considered a violation of standard label language, and as applicable, EPA's Worker Protection Standard (40 CFR part 170). This means that direct contact is not evaluated in risk assessment but is addressed through enforcement action against persons not complying with label prohibitions/directions, through applicator education, and through other means. The primary focus on spray drift in the human health risk assessment process is through indirect contact with contaminated surfaces such as lawns. The draft guidance document describes scenarios for which quantitative risk assessments for spray drift would generally be appropriate, and provides the information needed to complete a residential turf assessment using spray drift fractions predicted by AgDRIFT.

Spray drift is governed by a variety of factors which govern how much of the pesticide application deposits on surfaces where contact with residues can eventually lead to indirect exposures (e.g., children playing on lawns that are next to treated fields and where residues have deposited). The potential risk estimates from these residues can be calculated using drift modeling coupled with methods employed for residential risk assessments for turf products. There is a regulatory precedent for this approach as it has been used by the Agency in a number of previous situations that include:

- Response to a petition to cancel 14 pesticides, (69 FR 30042; May 26, 2004; FRL-7355-7),

- Development of buffer zone estimates for two organophosphate insecticides used on orchard crops in the Pacific Northwest, and

- Development of a recent spray drift risk assessment for all uses of an organophosphate insecticide, available at

<http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2008-0850-0105>.

Using default assumptions, the AgDRIFT model is used to predict spray drift estimates (similar to the ecological assessment process described in Unit III.) in the absence of application parameters such as droplet size spectrum, release height, wind speed, and percent of swath displacement (i.e., the same Tier 1 input parameters are used to compute drift fractions for both human health and ecological risk assessment). In the human health risk assessment process, deposition estimates are integrated over 50 feet wide lawns to account for the fact that small children can play anywhere on an impacted lawn. In the draft guidance document (Ref. 2), drift estimates are then used to adjust deposition values for the standard methods for evaluating children's exposure from treated turf. Small children are the focus of this methodology because they have the highest exposures. Values are calculated using lawns at different distances away from a treatment area—adjoining it to 300 feet away. Also, additional spray drift deposition values are included which account for more options available in the AgDRIFT model which allows for flexibility in the risk management process. These include:

- All canopy types for orchard airblast sprayers,
- All boom height and spray quality combinations available for groundboom sprayers, and

- Different options for aircraft including consideration of helicopter use and differing spray qualities (e.g., coarse instead of fine to medium spray quality).

V. Request for Comment

EPA is providing an opportunity, through this notice, for the public to provide comments and input on any additional information that may impact the Agency's assessment of spray drift in pesticide risk assessments. Specifically included within the Agency's request for comments are the model-generated spray drift values as described in either or both of the draft guidance documents.

With regards to the Ecological and Drinking Water Assessment Guidance, as discussed in Unit III., EPA currently uses spray drift estimates, developed in the 1990s, using best professional judgement: 5% (aerial application), 3% (air-blast application) and 1% (ground application) in selected terrestrial and Tier II aquatic exposure assessments. Based upon continued model refinements, EPA is revising this approach and is beginning to incorporate AgDRIFT model estimates in all tiers for terrestrial and aquatic environments to estimate more realistic exposure from spray drift deposition. This approach is more consistent with current approaches throughout OPP. EPA is seeking comment on this approach.

While EPA does not intend to formally respond to all comments made, comments in response to this notice will be taken into consideration as EPA finalizes these guidance documents. If substantive comments are made that may substantially change the EPA's consideration of spray drift in pesticide risk assessment, EPA will notify the public of these comments and describe how EPA has responded to them.

VI. References

As indicated under **ADDRESSES**, a docket has been established for this notice under docket ID number EPA-HQ-OPP-2013-0676. The following is a listing of the documents that are specifically referenced in this action. The docket includes these documents and other information considered by EPA, including documents that are referenced within the documents that are included in the docket, even if the referenced document is not physically located in the docket. For assistance in locating these other documents, please consult the persons listed under **FOR FURTHER INFORMATION CONTACT**.

1. USEPA. Guidance on Modeling Offsite Deposition of Pesticides via Spray Drift for Ecological and Drinking Water Assessments for the Environmental Fate and Effects Division (Draft dated 11/1/2013).
2. USEPA. Residential Exposure Assessment Standard Operating Procedures (SOPs), Addenda 1: Consideration of Spray Drift (Draft dated 11/1/2013).
3. USEPA. Use of AgDRIFT and AGDISP in OPP Risk Assessments.
4. RESOLVE. 1992. Improving Aquatic Risk Assessment under FIFRA: Report of the Aquatic Effects Dialogue Group. Published by World Wildlife Fund, Suite 500, 1250 24th Street NW, Washington, DC 20037.
5. Birchfield N B. 2004. Pesticide spray drift and ecological risk assessment in the U.S. EPA: A comparison between current default spray drift deposition levels and AgDRIFT predictions in screening-level risk assessments. Aspects of Applied Biology 71: 125-131.

List of Subjects

Environmental protection, Administrative practice and procedure, Agricultural commodities, Pesticides and pests.

Dated: January 13, 2014.

Steve Bradbury,
Director, Office of Pesticide Programs.

[FR Doc. 2014-01234 Filed 01/28/2014 at 8:45 am; Publication Date: 01/29/2014]